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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/091,575

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Ippei Shake

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Finnegan, Henderson, Farabow,
Garrett & Dunner, L.L.P.
1300 I Street, N.W.
Washington, DC 20005-3315

EXAMINER

WANG, QUAN ZHEN

ART UNIT

PAPER NUMBER

2633

DATE MAILED: 02/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/091,575

Applicant(s)

SHAKE ET AL.

Examiner

Quan-Zhen Wang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☒ Claim(s) 5-40 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/24/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Alexander et al. (U.S. Patent US 5,986,782).

Regarding claim 1, Alexander teaches an optical wavelength division multiplexed signal monitoring apparatus (fig. 2) comprising: optical wavelength division demultiplexing means (fig. 2, element 54) for carrying out optical wavelength division demultiplexing of an optical wavelength division multiplexed signal (fig. 2, signal $\lambda_1 - \lambda_j$) including N optical signals (column 1, lines 57-61) with a bit rate f_0 (bits/s) (inherent), which are wavelength multiplexed, where N is an integer greater than one (column 1, lines 57-61); one or N opto-electric conversion means (fig. 2, power meter 56) for receiving optical wavelength division demultiplexed signals demultiplexed by the optical wavelength division demultiplexing means (fig. 2, element 54), and for converting the optical wavelength division demultiplexed signals into electric intensity modulated signals (column 4, lines 61-63); and electric signal processing means (fig. 2, processor 58) for carrying out optical signal quality evaluation based on the electric intensity modulated signals output from the opto-electric conversion means (fig. 2, power meter

56), wherein the electric signal processing means is a single system (column 8, lines 12-19).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Alexander et al. (U.S. Patent US 5,986,782) in view of Karasawa (U.S. Patent US 6,834,052 B1).

Regarding claim 2, Alexander has been discussed above in regard with claim 1. Alexander further teaches that the electric signal processing means has N inputs (fig. 2, inputs from power meters 56 to processor 58). Alexander differs from the claimed invention in that Alexander does not specifically teach that the signal processing means stores N channel electrical signals supplied from the opt-electric conversion means by N buffers for a predetermined time period, and processes the electric signals by sequentially reading them from the buffers. However, it is well known in the art that an electric signal processing means can store electric signals to be processed for a predetermined time period, and processes the electric signals by sequentially reading them from the storage buffers. For example, Karasawa teaches an electric signal processing means which stores the electrical signal to be processed in buffers (column 11, lines 12-15), processes the signal by sequentially in predetermined time interval

(column 11, lines 9-12). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate an electric signal processing means, such as the one taught by Karasawa, for the signal processor of apparatus of Alexander to store electric signals to be processes for a predetermined time period, and processes the electric signals by sequentially reading them from the storage buffers in order to calculate the optical signal to noise ratio at each optical channel wavelength and monitor performance of each individual channel.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Alexander et al. (U.S. Patent US 5,986,782) in view of Hayashi (U.S. Patent Application Publication US 2001/0028256 A1).

Regarding claim 3, Alexander has been discussed above in regard with claim 1. Alexander further teaches that the electric signal processing means has N inputs (fig. 2, inputs from power meters 56 to processor 58). Alexander differs from the claimed invention in that Alexander does not specifically teach that the signal processing means processes N channel analog electric signals supplies from the N opt-electric conversion means by sequentially reading the analog electric signals by sequentially switching connection with the analog electric signals. However, it is well known in the art that an electric signal processing means can process N channel analog electric signals supplies from N electric signal sources (detectors) sequentially reading the analog electric signals by sequentially switching connection with the analog electric signals. For example, Hayashi teaches an electric-signal processing means (fig. 1, switch array 70

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and processing unit 10) which processes N channel analog electric signals supplies from N electric signal sources (fig. 1, measurement unit 60) sequentially reading the analog electric signals by sequentially switching connection (fig. 1, switch array 70) with the analog electric signals (paragraph 0015). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to apply an electric signal processing means having a switch array, such as the one taught by Hayashi, for the signal processor in the apparatus of Alexander in order to calculate the optical signal to noise ratio at each optical channel wavelength and monitor performance of each individual channel.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Alexander et al. (U.S. Patent US 5,986,782) in view of Cao (U.S. Patent US 6,344,910 B1).

Regarding claim 4, Alexander has been discussed above in regard with claim 1. Alexander differs from the claimed invention in that Alexander does not specifically teach that the apparatus further comprising wavelength selection means disposed before the electric signal processing means for making wavelength selection by wavelength division demultiplexing to reduce a number of inputs to the electric signal processing means to one. However, it is well known in that art to use a wavelength selection means to select a wavelength from a demultiplexer. For example, Cao teaches an optical performance monitor (fig. 4) using a wavelength selection means (fig. 4, switch 412) to select a wavelength from a demultiplexer (fig. 4, CWDM 410). Therefore, it would have been obvious for one of ordinary skill in the art at the time

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when the invention was made to apply a wavelength selection means, such as the one taught by Cao, and dispose before the electric signal processing means for making wavelength selection by wavelength division demultiplexing in order to detect the optical signal and noise at each optical channel wavelength individually.

The electric signal processing means of the modified apparatus by Alexander and Cao inherently stores an electric signal supplied from the opto-electric conversion means by a single buffer for a predetermined time period and processes the electric signal by reading it from the buffer.

Allowable Subject Matter

7. Claims 5-40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is an examiner's statement of reasons for allowance:

Claims 5-40 are allowable since the prior art of record does not teach or suggest in combination a sampling clock generation means for generating a sampling clock signal whose repetition frequency is $f_1(\text{Hz}) = (n/m)f_0 + a$, in addition to other limitations recited in claims 5-40.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Mock (U.S. Patent US 5,790,285) teaches a lightwave communication monitoring system.

Kang et al. (U.S. Patent US 6,347,169A1 B1) teach an apparatus and method for monitoring optical signals of a WDM communication system.

Youn et al. (U.S. Patent Application Publication US 2003/0030859 A1) disclose an optical performance monitoring apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quan-Zhen Wang whose telephone number is (571) 272-3114. The examiner can normally be reached on 9:00 AM - 5:00 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

qzw


M. R. SEDIGHIAN
PRIMARY EXAMINER